

IN THE CLAIMS

Please amend the claims as follows:

1. (original) Method of producing a semiconductor device comprising:
  - a) providing a semiconductor substrate,
  - b) providing an insulating layer on a top surface of the semiconductor substrate,
  - c) making an amorphous layer in a top layer of said semiconductor substrate by a suitable implant,
  - d) implanting a dopant into said semiconductor substrate through said insulating layer to provide said amorphous layer with a predetermined doping profile,
  - e) applying a solid phase epitaxial regrowth action to regrow said amorphous layer and activate said dopant, wherein in action d), said implant is performed such that said doping profile has a peak value located within said insulating layer.
  
2. (original) Method according to claim 1, wherein said dopant is activated to provide said amorphous layer after action e) with a conductivity profile having a peak conductivity value located substantially at said top surface.

3. (currently amended) Method according to claim 1-~~or 2~~, wherein said semiconductor substrate is a Si substrate and action c) is performed with at least one of Ge, GeF<sub>2</sub>, Si, Xe or Ar atoms.

4. (original) Method according to claim 3, wherein said action c) is performed with Ge in a dose of 10<sup>15</sup> atoms/cm<sup>2</sup> and an energy between 2 and 30 keV.

5. (currently amended) Method according to ~~any of the preceding claims~~claim 1, wherein said action d) is performed with B at an energy of less than 5 keV.

6. (original) Method according to claim 5, wherein said action d) is performed with B and a dose of 10<sup>15</sup> atoms/cm<sup>2</sup>.

7. (original) Method according to claim 6, wherein action d) is performed at a temperature of 550-700 °C during about 1 minute.

8. (original) Semiconductor device made by a solid phase epitaxial regrowth technique, comprising a top layer at a surface of a semiconductor substrate with a conductivity profile having a peak conductivity value located substantially at said surface.

9. (original) Metal oxide semiconductor device comprising a device as claimed in claim 8.

10. (currently amended) Apparatus provided with a semiconductor device as claimed in claim 8 ~~or 9~~.